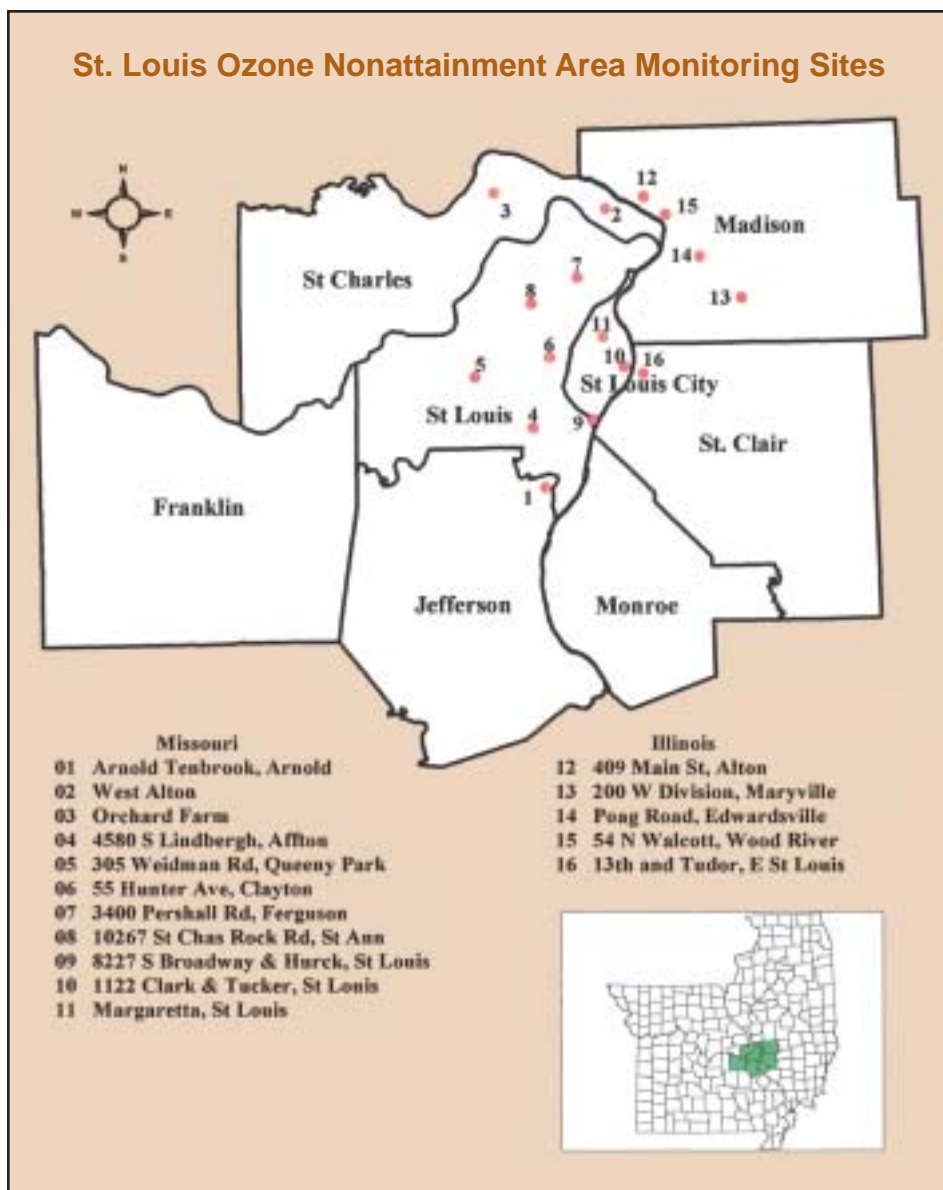


## OZONE IN ST. LOUIS

It is considered a violation, when four or more exceedances of the one-hour health-based standard for ozone occur at the same monitor in a three-year period. When a violation occurs, the area is designated as nonattainment. Nonattainment areas are then divided into five classifications based on the severity of the exceedances that occurred at the monitor in a three-year period: marginal, moderate, serious, severe and extreme. Under the Clean Air Act, EPA has designated many areas in the country as nonattainment for ozone. In 1999, the St. Louis ozone nonattainment area was one of five areas nationwide classified as a “moderate” ozone nonattainment area.

The St. Louis **ozone nonattainment area** includes the city of St. Louis, and the counties of St. Charles, St. Louis, Jefferson and Franklin in Missouri and Madison, Monroe and St. Clair counties in Illinois. The map at the right shows the sites for air monitors in the **ozone nonattainment area**.

### St. Louis Ozone Nonattainment Area Monitoring Sites

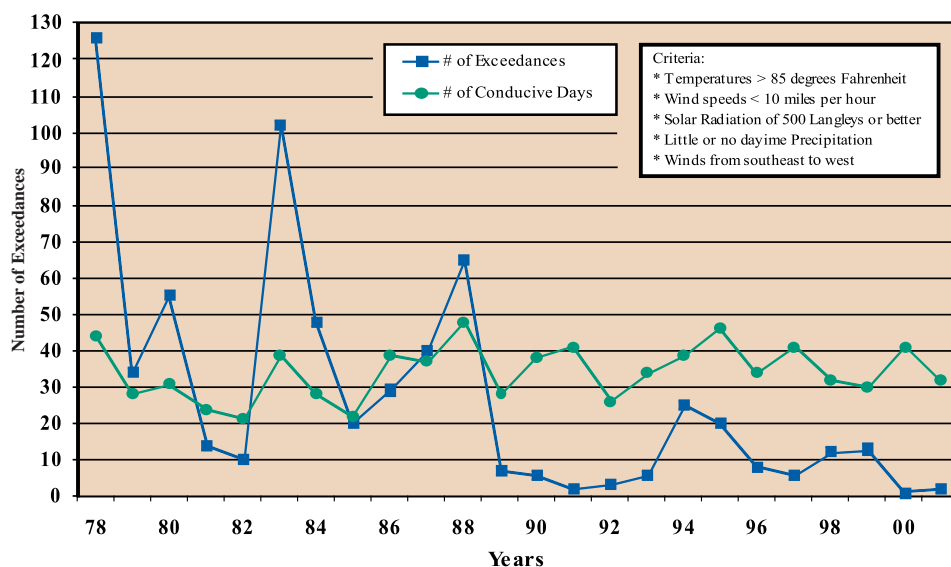


**Exceedance:** An exceedance occurs when levels of a certain pollutant are higher than those deemed safe by the federal government.

**Violation:** Four or more exceedances at the same air quality monitor in a three-year period equal a violation of the one hour standard.

**Nonattainment:** An area that has had a violation is classified as “nonattainment.” Nonattainment areas are then divided into five categories: marginal, moderate, serious, severe and extreme.

### St. Louis Nonattainment Area 1-Hour Ozone 1978 - 2001 Number of Exceedances vs. Conducive Days



## CONTROLLING ST. LOUIS OZONE

Missouri's State Implementation Plan (SIP) for the St. Louis ozone nonattainment area includes control measures and schedules for compliance with the Clean Air Act in order to attain the federal health-based standard for ground-level ozone. To reduce ozone

concentrations to safe levels, the state must control both industrial and mobile sources of volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>). Cars, trucks and buses are examples of mobile sources of VOCs. Major control measures benefiting St. Louis recently included a vehicle emissions inspection and maintenance program, Stage II vapor recovery systems for gasoline refueling, advanced emissions control systems for industrial sources and controls on

### Number of Days with Excessive Ozone - St. Louis Nonattainment Area

#### Number of One-Hour Exceedances

Site	Address	91	92	93	94	95	96	97	98	99	00	01
<b>St. Louis</b>	<b>Missouri</b>											
Arnold	Arnold and Tenbrook	0	0	0	2	2	1	1	1	1	0	0
West Alton	Highway 94	0	0	0	4	4	1	1	2	3	1	1
Orchard Farm						2	1	0	1	2	0	0
St. Louis	8227 S. Broadway	0	0	0	0	0	1	0	1	0	0	0
St. Louis	1122 Clark and Tucker	0	0	0	0	0	0	0	1	1	0	0
St. Louis	Newstead & Cote Brillante	0	0	0	0	1	0	0	0	0		
St. Louis	Margaretta										0	0
Affton	South Lindbergh	1	2	2	2	0	1	1	1	0	0	0
Queeney Park	305 Weidman	0	0	0	5	1	0	0	1	1	0	0
Clayton	55 Hunter Avenue	0	1	0	3	0	0	0	1	1	0	0
Ferguson	3400 Pershall Road	0	0	0	2	1	0	1	1	1	0	0
St. Ann	10267 St. Charles Rock Road	0	0	0	4	1	0	0	1	1	0	
Breckenridge	9630 St. Charles Rock Road											0
	<b>Illinois</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>00</b>	<b>01</b>
Alton	409 Main Street	0	0	2	1	1	2	0	0	1	0	0
Maryville	200 West Division	0	0	1	1	1	0	0	0	0	0	0
Edwardsville	Poag Road	1	0	0	0	3	0	1	0	0	0	0
Wood River	54 North Walcott	0	0	0	1	2	1	1	0	1	0	1
East St. Louis	13th and Tudor	0	0	1	0	1	0	0	1	0	0	0
<b>St. Louis Nonattainment Total</b>		<b>2</b>	<b>3</b>	<b>6</b>	<b>25</b>	<b>20</b>	<b>8</b>	<b>6</b>	<b>12</b>	<b>13</b>	<b>1</b>	<b>2</b>

### Number of Days with Excessive Ozone

St. Louis exceeded the **ozone** standard each summer between 1996 and 2001. The table above shows the number of days that sites in Missouri and Illinois reported exceeding the **ozone** standard. The St. Louis **ozone nonattainment area** reported two **exceedances** of the one-hour standard during the 2001 **ozone** season (April 1 through October 31).

NO<sub>x</sub> emissions from utility boilers. The two control strategies leading to the greatest reductions in VOC emissions are enhanced vehicle inspection and maintenance and the use of reformulated gasoline.

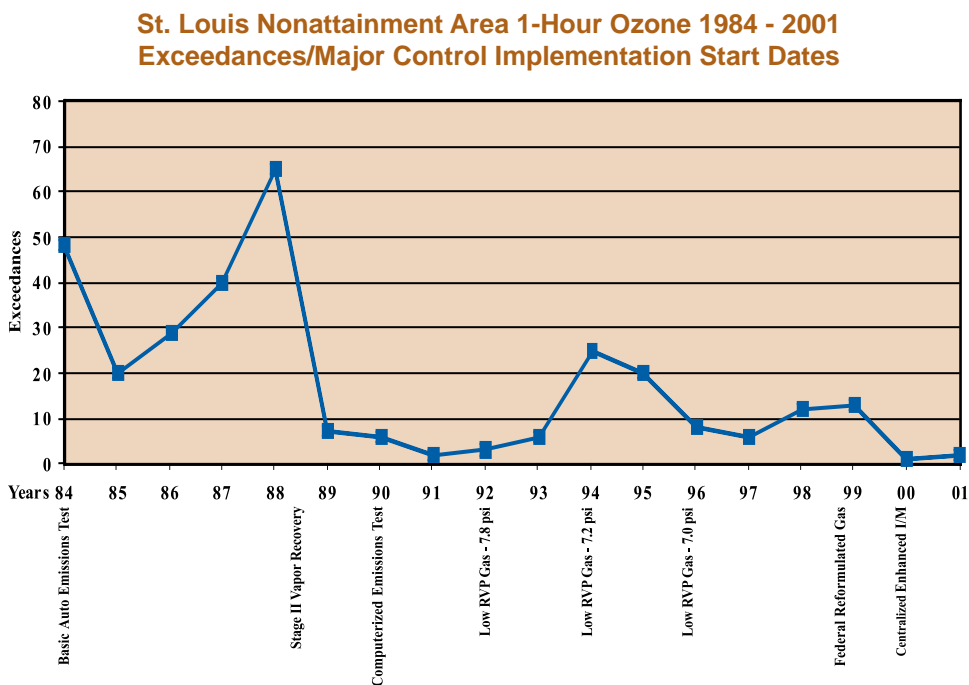
## Conformity Analysis/ Determination

In accordance with the 1990 Clean Air Act - section 176(c), all transportation plans, programs and projects are required to conform to air quality plans for transportation-related pollutants in **nonattainment** and maintenance areas. The air quality conformity analysis/determination is the Clean Air Act requirement that calls for EPA, the United States Department of Transportation and various Missouri and Illinois state, regional and local government agencies to integrate the air quality and transportation planning development process. Transportation conformity supports the development of transportation plans, programs and projects that enable areas to meet and **maintain national air quality standards** for **ozone**, particulate matter and **carbon monoxide**, which impact human health and the environment.

The East-West Gateway Coordinating Council conducts and coordinates the air quality conformity analysis/determination for St. Louis in cooperation with EPA, the United States Department of Transportation and various Missouri and Illinois state, regional and local government agencies. Currently, the air quality conformity analysis/determination is performed on an annual basis.

## Vehicle Emissions Inspections

Programs for vehicle emissions testing and repair, or Inspection and Maintenance (I/M) programs, are key mechanisms for controlling mobile source emissions in many urban regions nationwide. The Gateway Clean Air Program is an inspection



and maintenance program in the St. Louis **nonattainment** area implemented to control mobile source emissions. The Gateway Clean Air Program represents a large portion of the Department of Natural Resources' **state implementation plan** to bring St. Louis into compliance with the **National Ambient Air Quality Standards (NAAQS)** for **ozone**.

The Gateway Clean Air Program uses new emissions testing technologies. An enhanced emissions test simulates real driving conditions on a dynamometer (treadmill-like device) during testing. This measures specific pollutants from vehicles much more precisely than the older idle testing system. A second test, called RapidScreen, uses a remote sensing device to monitor exhaust emissions while vehicles are being driven on roads and highways. RapidScreen allows the very cleanest-running vehicles to pass the new emissions test without visiting emissions testing stations. An improved version of the idle test is used for vehicles manufactured from 1971 through 1980 and for vehicles tested in Franklin County.

The emission standards of the enhanced emissions testing procedure will become more stringent in 2002 according to state rule 10 CSR 10-5.380, "Motor Vehicle Emissions Inspection." Because the emission standards will be more stringent, more vehicles will need to be repaired in order to be registered in the **nonattainment** area. Therefore, the Gateway Clean Air Program will be more instrumental in bringing the St. Louis **nonattainment** area into **attainment**.

Due to federal rulemaking published by EPA in 2001, the Air Pollution Control Program has made preliminary plans to modify the emission test requirements for 1996 and newer model year vehicles. Beginning as early as January 2003, vehicles that are model year 1996 and newer will not be tested with either the new enhanced emissions testing procedure or the improved basic idle emissions test. Instead, these vehicles will only have the on-board diagnostics systems tested.

On-board diagnostics is a computerized system that monitors the vehicles' emissions control

components. A “check engine” or malfunction indicator (MIL) light turns on if the vehicle develops a problem. To check a vehicle’s on-board diagnostics, an inspector plugs a computer into the vehicle and generates a report on likely future emissions. Currently, the Gateway Clean Air Program checks 1996 and newer vehicles using on-board diagnostics and provides the report to motorists as an advisory only.

Additional information about the Gateway Clean Air Program is available by visiting the following Web sites: [gatewaycleanair.com](http://gatewaycleanair.com), [www.dnr.state.mo.us/alpd/apcp/gcap/](http://www.dnr.state.mo.us/alpd/apcp/gcap/) or [www.cleanair-stlouis.com/gcap/](http://www.cleanair-stlouis.com/gcap/).

### Low Reid Vapor Pressure Gasoline and Reformulated Gasoline

Since VOCs are a main component of **ozone**, many volatile organic compound (VOC) control measures have been used in the effort to reach **attainment** of the **ozone** standard. In 1994, low Reid vapor pressure (RVP) gasoline was implemented in St.

Louis. RVP is a measure of the volatility of gasoline or its tendency to evaporate into the air. Lowering RVP reduces evaporative emissions of gasoline. Between 1994 and 1998, a state regulation restricted the RVP of gasoline sold in the St. Louis **nonattainment area** during the warmest months of the year, June 1 through Sept. 15.

Federal **reformulated gasoline (RFG)** has been required at retail gasoline stations in the St. Louis **ozone nonattainment area** since June 1, 1999. **RFG** is a gasoline formula designed to burn cleaner than conventional gasoline, and to reduce both exhaust and evaporative emissions by adjusting the amounts of various components already found in conventional gasoline. **RFG** is administered and enforced by EPA. Phase II of the **RFG** program that began Jan. 1, 2000, requires additional emission reductions compared to Phase I **RFG**. Phase II **RFG** requires a minimum of 25 percent VOC reductions, a 20 percent reduction in air toxics and a five to seven percent reduction in **NO<sub>x</sub>** emissions.

## Number of Days with Excessive Ozone - Kansas City Ozone Maintenance Area

### Number of One-Hour Exceedances

Site	Address	91	92	93	94	95	96	97	98	99	00	01
<b>Kansas City</b>	<b>Missouri</b>											
Liberty	Hwy 33 and County Hwy	0	0	1	0	3	0	1	2	0	0	0
Lawson	Watkins Mill State Park Road	0	0	0	0	3	0	0	1	0	0	0
Kansas City	49th and Winchester WOF	0	0	0	0	2	0	0	0	0	0	0
Kansas City	Richards Gebaur AFB	1	0	0	0	0	0	0	0	0		
Belton	203rd Street										1	0
Kansas City	11500 N. 71 Hwy KCI Airport	0	1	0	0	1	0	1	1	0	1	0
	<b>Kansas</b>	<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>00</b>	<b>01</b>
Wyandotte CO	Ann Avenue	0	0	1	0	0	1	0	1	0	0	0
<b>Total</b>		<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>0</b>